

Introduced by Senator Margett

February 24, 2006

An act to add Section 21655.10 to the Vehicle Code, relating to highways.

LEGISLATIVE COUNSEL'S DIGEST

SB 1791, as introduced, Margett. Highways: exclusive-use or preferential-use lanes.

Existing law requires, prior to establishing exclusive-use or preferential-use traffic lanes for high-occupancy vehicles (HOV lanes), that the Department of Transportation and local authorities, with respect to highways under their respective jurisdictions, make competent engineering estimates of the effect of the lanes on safety, congestion, and highway capacity.

This bill would request the University of California, on or before January 1, 2008, to conduct a study, in consultation with the Department of Transportation, to evaluate the effectiveness of use of different types of highway lanes.

The bill would require the University of California to submit a written report to specified legislative committees and the Department of Transportation on or before January 1, 2008. The bill would require the Department of Transportation to cooperate with the University of California in conducting the study and provide the university requested information. The bill would require the department to enter into a cooperative agreement with the university to provide funding for the costs of the study. The bill would require the Department of Transportation, on or before January 1, 2009, to change HOV lanes to mixed-flow lanes if the study reveals the HOV lane alternative is inefficient.

Vote: majority. Appropriation: no. Fiscal committee: yes.
State-mandated local program: no.

The people of the State of California do enact as follows:

1 SECTION 1. Section 21655.10 is added to the Vehicle Code,
2 to read:
3 21655.10. (a) The Legislature requests that the University of
4 California, on or before January 1, 2008, conduct a study, in
5 consultation with the Department of Transportation, to evaluate
6 the effectiveness of all exclusive-use or preferential-use lanes for
7 high-occupancy vehicles (HOV lanes) in this state. It is the intent
8 of the Legislature that this study include a traffic model of not
9 less than six months' duration that compares the alternatives of
10 establishing an exclusive-use or preferential-use lane for
11 high-occupancy vehicles (HOV lane alternative), establishing a
12 high-occupancy toll lane (HOT lane alternative), as defined in
13 subdivision (g), establishing a mixed-flow lane (mixed-flow lane
14 alternative), or not establishing additional lanes (no-build
15 alternative).
16 (b) It is the intent of the Legislature that the study identified
17 under subdivision (a) cover an analysis segment consisting of at
18 least the entire affected freeway section, or the corridor of which
19 that freeway is a part, and the entire congested period of the day,
20 and should include, but need not be limited to, all of the
21 following:
22 (1) A modal choice submodel showing the fraction of travelers
23 that will choose a high-occupancy vehicle mode, including, but
24 not limited to, car pools, vans, or buses, instead of driving alone,
25 dependent upon, but not limited to, the number of passengers
26 required to qualify a vehicle as a high-occupancy vehicle and the
27 HOV lane timesavings, the bus service available on the HOV
28 lane, the current proportion of people using each HOV mode, and
29 any other relevant factors. The submodel can be based on data
30 gathered from interviews conducted with motorists.
31 (2) Distribution of the total freeway volume between the HOV
32 lane and the mixed-flow lanes, dependent upon the modal choice
33 fraction and the proportions of HOV's using the HOV lanes on
34 highways with similar characteristics.

1 (3) A congestion submodel showing travel speeds and time,
2 dependent on the vehicular volume in the various lanes and any
3 downstream bottlenecks that affect the freeway.

4 (4) Calibration to confirm that the model yields results that are
5 consistent with observed prebuild traffic volumes, speeds, and
6 number of car pools. The observed total prebuild person trips
7 (over all modes) within the analysis segment, which is referred to
8 as the “person-trips base,” should be held constant and used as
9 the basis for subsequent benefit calculations.

10 (5) Iteration of the model as necessary to ensure that the travel
11 times found in paragraph (3) are consistent with those used in
12 estimating the fraction choosing high-occupancy vehicle modes
13 under paragraph (1).

14 (6) Total travel time, emissions, and fuel consumption should
15 be computed by summing over the same “person-trips base” for
16 each build alternative, and expressed as change relative to the
17 no-build alternative.

18 (7) Emissions estimates, including carbon monoxide, carbon
19 dioxide, hydrocarbons, and nitrogen oxides. Emissions and fuel
20 consumption can be computed using methods of the State Air
21 Resources Board and should be dependent upon vehicle miles
22 traveled, vehicle trips, and speeds in the various lanes.

23 (8) Capital costs, annual operating costs, and annualized
24 capital and operating costs should be estimated for each
25 alternative, incremental to the no-build alternative. Costs unusual
26 to each alternative, including any special lane width, buffer lanes,
27 additional shoulders, enforcement zones, merging regions,
28 enforcement operation, and toll collection facilities should be
29 separately identified and estimated.

30 (9) Cost-benefit ratios should be estimated for each alternative
31 and expressed as dollars of total annualized cost per unit of
32 benefit for each of the various benefit measures specified in
33 paragraphs (6) and (7), when costs and benefits are calculated
34 relative to the no-build alternative referred to in subdivision (a).

35 (10) Data sufficient to determine whether the use of
36 high-occupancy vehicle lanes improves air quality to the extent
37 included in the state implementation plan filed under the federal
38 Clean Air Act (42 U.S.C. Sec. 7401, et seq.).

39 (11) A comparison of the number of traffic violations,
40 accidents, injuries, and fatalities that occur on portions of

1 highways that have high-occupancy vehicle lanes to portions of
2 highways that do not have those lanes.

3 (12) A comparison of the average number of passengers per
4 vehicle before the portion of the highway had an HOV lane with
5 the average number of passengers per vehicle after the portion of
6 the highway had an HOV lane.

7 (13) An evaluation of relationships between public transit
8 service and usage and the introduction and usage of
9 high-occupancy vehicle lanes in a given corridor.

10 (14) A model evaluating the potential impact to public transit
11 services in a given corridor if high-occupancy vehicle lanes are
12 not used.

13 (c) The Legislature requests that the University of California,
14 in consultation with the Department of Transportation, analyze
15 the results of the study for each of those lanes that were
16 examined, and issue findings and recommendations for the most
17 efficient choice among the HOV lane alternative, the HOT lane
18 alternative, the mixed-flow lane alternative, and the no-build
19 alternative in terms of total person delay, emissions, and cost.

20 (d) The University of California shall submit a written report,
21 on or before January 1, 2008, which includes an analysis of the
22 results of the study, findings, and recommendations as specified
23 in subdivision (c), to the Assembly Committee on
24 Transportation, the Senate Committee on Transportation and
25 Housing, and the Director of Transportation.

26 (e) The analysis results and a description of the methodology
27 shall be documented in sufficient detail to support stand-alone,
28 critical review, and duplication of the results.

29 (f) The Department of Transportation shall cooperate with the
30 University of California in conducting the study identified in
31 subdivision (a) and provide all information that is requested and
32 deemed by the university to be necessary for the completion of
33 the study.

34 (g) For purposes of this section, a “high-occupancy toll lane”
35 or “HOT lane” is an HOV lane that, for a toll, may be used by
36 vehicles with less than the number of passengers otherwise
37 required to lawfully use the lane.

38 (h) The Department of Transportation shall enter into a
39 cooperative agreement with the University of California for the
40 purpose of funding the costs of the study identified in subdivision

- 1 (a). The reimbursement shall be made from resources currently
- 2 available to the department.
- 3 (i) If the results of the study demonstrate that the HOV lane
- 4 alternative is failing to achieve its objective, then the Department
- 5 of Transportation, on or before January 1, 2009, shall change
- 6 HOV lanes to mixed-flow lanes.